

8"-16" Tapering & Scarfing Tool Operating Instructions

Introduction

This tool is used to taper or scarf 8"-16" Red Thread™, Green Thread™, and Silver Streak™ pipe. The following machining operations may be performed on the designated pipe sizes with this tool.

Tapering - 8"-16" Red Thread, Green Thread, and Silver Streak pipe, produces a 1° taper angle on the pipe.

Scarfing - 8"-14" Red Thread and Green Thread secondary containment pipe, produces a 0° scarf on the pipe.

Materials Needed:

1. 110 volt electrical power source
2. Pipe vise, sturdy work bench or pipe stands
3. Tie down straps or come-longs to secure pipe
4. O.D. tape measure
5. Allen wrench set and adjustable end wrench

Counterbalance Installation:

The tool is shipped with a counterbalance block that needs to be bolted to the tool. Locate the four bolt holes on the tool body opposite the cutting head. Mount the counterbalance and secure the bolts tightly before tool is used.

Procedure For Use:

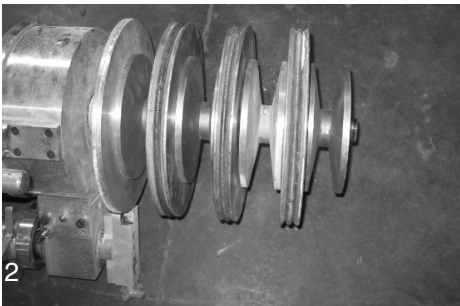
Be sure the tool is unplugged during initial set up, performing maintenance, or removing the tool from the pipe. When the tool is in operation, use a protective safety barrier around the tool.

Tool Set Up:

1. Secure pipe with a factory taper to a sturdy work table or heavy duty pipe stand with tie down straps.



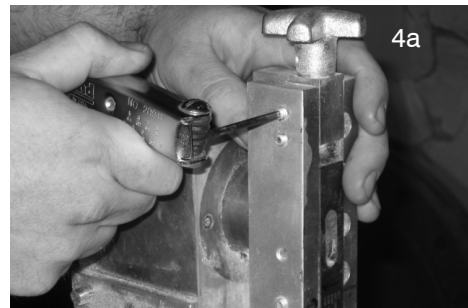
2. Place mandrels on the mandrel shaft with a spacer between each mandrel. Spin the nut up but do not tighten.



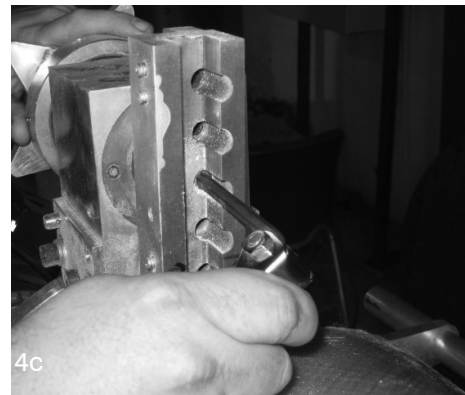
3. Insert tool into pipe with a factory taper or scarf and tighten mandrels using an adjustable end wrench on the mandrel shaft nut.



4. Tool head must be set to the appropriate size.
 - a. Loosen two set screws at the top of the cutting head holder and the two thumb screws at the bottom. Remove cutting head.

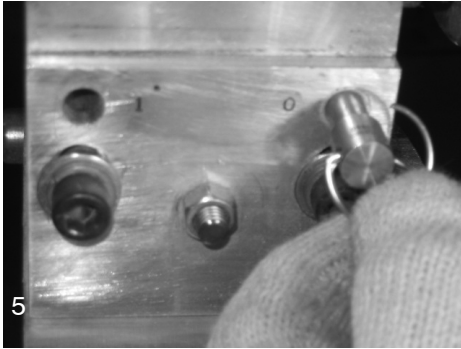


- b. Loosen Allen head bolt and remove the cutting head holders.
- c. Place the bolt through the hole on the cutting head holder designated for the size pipe you wish to taper or scarf. Retighten the bolt.



- d. Place cutting head back in the cutting head holder flush with the top and tighten the two screws.

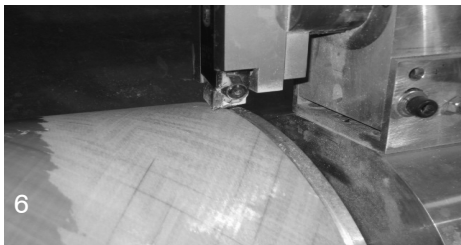
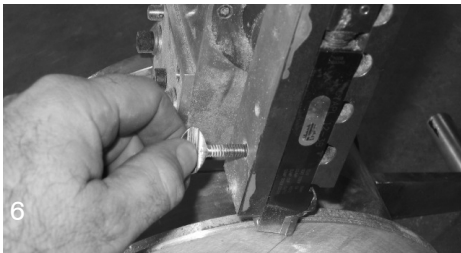
5. Make sure tool is set for proper angle for the product being installed: 1° for bell x spigot tapered joints and 0° for straight socket or secondary containment joints. To change setting, loosen four Allen head screws center block. Pull pin and place in the appropriate hole.



Setting the Depth of Cut

Tool must be inserted into a factory taper or scarf. If a factory scarf or taper is not available, proceed to Step 9.

6. Loosen thumb screws at the bottom of the cutting head. Turn the cutting head knob until the cutting head insert makes light contact with the factory taper or scarf. Tighten bottom thumb screws to lock in cutting depth.



7. With a fine point, permanent marker, place a mark on the cutting head to mark the depth to taper or scarf the pipe. This will be your depth mark in the event the pipe has to be double cut.

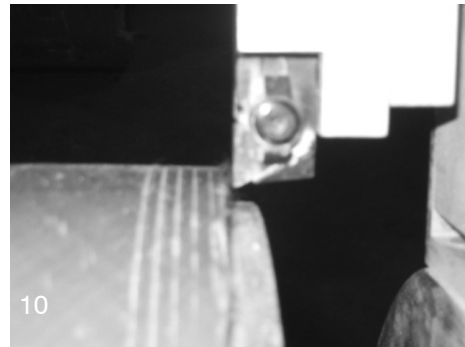


8. For 8"-16" Red Thread HP16 and Green Thread HP16, proceed to Step 9. HP25 products may require a "double cut" due to the thickness of the wall. Loosen the bottom thumb screws and raise the cutting head up to where it will cut a maximum of 1/8" off the wall. Once first cut is complete, reset cutting head to depth mark made in Step 7.

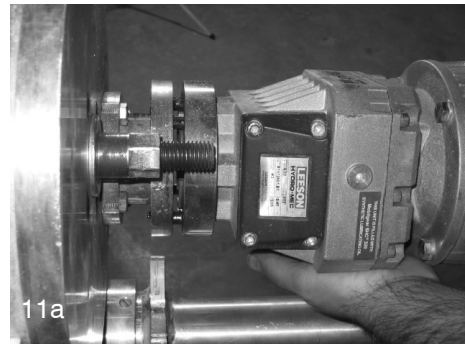
Tapering and Scarfing Plain End Pipe

9. Place tool into pipe to be tapered or scarfed and tighten mandrels.

10. Using the star on the cutting head tube, move cutting head horizontally where it is sitting next to the **longest** edge of the pipe but "**not**" touching it.



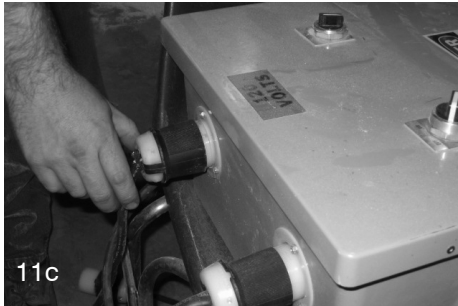
11. a. Attach the motor to the tool by inserting the four cam bolts through the four adjoining holes and aligning the locking pin with the receiving hole.



b. Twist motor to the right and release locking pin to lock in the motor. Be sure that the on/off switch on the control box is in the off position and that no one is standing next to the tool.



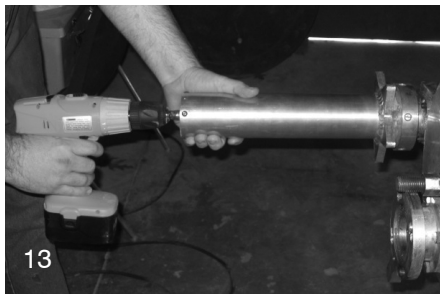
- c. Connect a cable between the tool and the control box and then connect the power cable from the control box to a 115 volt power source.



Warning: Be sure the control box is located a minimum of 10 feet away from the pipe and the tool. Keep all personnel a minimum of 10 feet away from tool while running. Unplug the control box from the power source before approaching tool.

12. If tool is set to the factory dimensions (Steps 6-8), you are ready to begin tapering or scarfing the pipe. From the zero position, slowly increase the speed to 3 until the cutter is making 360 degrees of contact with the pipe. If the pipe is not cut square and the speed is too high, the cutting head may “dig in” and cause an overload on the tool or cause the mandrels inside the pipe to spin. When the cutter is making 360 degrees contact, you may turn speed up to a comfortable level.

13. Taper or scarf pipe until cutting head is no longer cutting. Use a reversible drill on back of cutting head shaft to back out cutting head.



14. For “thicker” wall products, loosen thumb screws and adjust cutting head down to depth mark made in (Step 7). Repeat this step until proper insertion depth is reached (Step 16) or scarf dimension (Tables 1 or 2) is achieved.

15. If chatter or “feathering” appears on the machined surface, the pipe must be cut, retaper, and slow the machine down on the final cut. If chatter or feathering remains, rotate the cutting insert to a fresh side. If the taper or scarf is feathered, thoroughly sand the machined surface to remove loose fibers. For scarfed ends, the back edge of the machined area will require a thorough sanding as well, to remove the rough edges from the scarfing operation.

16. For tapered spigots, check end dimension with a loose coupling or flange. Insertions should be $\pm 1/4$ ”, the insertion length of a factory spigot. If no factory spigot is available, refer to the Matched Taper Joint Installation Manual for dry insertion

lengths.

17. For scarfed pipe, measure the scarfed OD with an OD or diameter tape. Refer to either Table 1 or Table 2 for the appropriate scarfing dimension.



Note: Over loading the motor will cause it to automatically shut down to protect itself. If this happens, shut the power off and unplug the tool. Wait 30 seconds and turn on the power. If the motor will not start, shut the power off and unplug the tool. Open the control box and check to see if the breaker has been tripped. If the motor doesn't start after the above actions are taken, contact NOV Fiber Glass Systems.

Table 1 - Scarfing Dimensions for Secondary Containment

Containment Pipe size in	Scarf Diameter Using Diameter Tape ($\pm .020''$) in	Scarf Circumference Using Standard Tape Measure ($\pm 1/16''$) in	Scarf Length in
8	8.570	26 ¹⁵ / ₁₆	4
10	10.570	33 ³ / ₁₆	5
12	12.550	39 ⁷ / ₁₆	5
14	14.410	45 ¹ / ₄	5
16	16.410	51 ⁹ / ₁₆	5

Note: Maximum taper over entire scarfed area cannot exceed 0.030”.

Table 2 - Scarfing Dimensions for GREEN THREAD™ 175/250 Marine-Offshore Piping⁽¹⁾

Pipe Size		Scarf Diameter Using Diameter Tape		Scarf Circumference Using Standard Tape Measure		Scarf Length		Scarf Length for Flanges	
in	mm	in	mm	in	mm	in	mm	in	mm
8	200	8.740 - 8.750	222.0 - 222.3	27 ¹⁵ / ₃₂ - 27 ¹ / ₂	697.7 - 698.5	3 ¹ / ₄	83	3 ¹ / ₄	83
10	250	10.820 - 10.830	274.8 - 275.1	34 - 34 ¹ / ₃₂	863.6 - 864.4	4 ¹ / ₄	108	3 ¹ / ₂	89
12	300	12.840 - 12.850	326.1 - 326.4	40 ¹¹ / ₃₂ - 40 ³ / ₈	1024.7 - 1025.5	4 ¹ / ₄	108	3 ¹ / ₂	89

⁽¹⁾ Although this piping system has been discontinued, table is required for maintenance of in service systems.



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